101.1 - Plain Carbon Steels (chip form)

These SRMs are for checking chemical methods of analysis. They consist of steel alloys selected to provide a wide range of analytical values for elements. They are furnished in 150-g units (unless otherwise noted) as chips usually sized between 0.4 mm to 1.2 mm, prepared from selected portions of commercial ingots.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	8k	12h	13g	14g	16f	19h
Description	**Bessemer Steel (Simulated), 0.1 % Carbon**	**Basic Open-Hearth Steel, 0.4% Carbon**	**0.6% Carbon Steel**	**Carbon Steel (AISI 1078)**	**Basic Open-Hearth Steel, 1% carbon**	**Basic Electric Steel, 0.2% Carbon**
Unit of Issue	**(150 g)**	**(150 g)**	**(150 g)**	**(150 g)**	**(150 g)**	**(150 g)**
			Element Composition (mass fraction, in %)			
Aluminum (total) (Al)		(0.038)	0.048	0.025		0.002
Carbon (C)	*0.0806*	0.407	0.613	0.735	0.97	0.215
Chromium (Cr)	0.0467	0.074	0.050	0.081	0.020	0.173
Cobalt (Co)					0.003	
Copper (Cu)	0.0200	0.073	0.066	0.047	0.006	0.466
Manganese (Mn)	0.5040	0.842	0.853	0.456	0.404	0.393
Molybdenum (Mo)	*0.0397*	0.006		0.011	0.003	0.038
Nickel (Ni)	*0.1174*	0.032	0.061	0.030	0.008	0.248
Nitrogen (N)		0.006				
Phosphorus (P)	*0.0956*	0.018	0.006	0.006	0.014	0.016
Silicon (Si)	*0.0576*	0.235	0.355	0.232	0.214	0.211
Sulfur (S)	*0.0775*	0.027	0.031	0.019	0.026	0.022
Tin (Sn)						
Vanadium (V)	0.0145	0.003	0.001	0.0008	0.002	0.003

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only

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SRM	20g	152a	178	368
Description	**AISI 1045 Steel**	**Basic Open-Hearth Steel 0.5% Carbon (Tin Bearing)**	**0.4C Basic Oxygen Furnace Steel**	**Carbon Steel (AISI 1211)**
Unit of Issue	**(150 g)**	**(150 g)**	**(150 g)**	**(150 g)**
		Element Composition (mass fraction, in %)		
Aluminum (total) (Al)	0.040			
Carbon (C)	0.462	0.486	0.395	*0.090*
Chromium (Cr)	0.036	0.046	0.016	0.0295
Cobalt (Co)				
Copper (Cu)	0.034	0.023	0.032	0.00984
Manganese (Mn)	0.665	0.717	0.824	0.8238
Molybdenum (Mo)	0.008	0.036	0.003	0.00311
Nickel (Ni)	0.034	0.056	0.010	0.00783
Nitrogen (N)				0.01030
Phosphorus (P)	0.012	0.012	0.012	0.0827
Silicon (Si)	0.305	0.202	0.163	0.0067
Sulfur (S)	0.028	0.030	0.014	*0.1324*
Tin (Sn)		0.032		
Vanadium (V)	0.002	0.001	0.001	*0.0013*

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